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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,451	07/10/2003	Wesley L. Bratton	89989-0304678	3843

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EXAMINER

CYGAN, MICHAEL T

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,451

Applicant(s)

BRATTON ET AL.

OK

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/10/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/04/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Color photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84(a)(2) is granted permitting their use as acceptable drawings. In the event that applicant wishes to use the drawings currently on file as acceptable drawings, a petition must be filed for acceptance of the color photographs or color drawings as acceptable drawings. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8, 10, 11, 13, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chatteraj (US 6,329,165 B1). Chatteraj discloses the claimed invention, a method and apparatus for characterizing a contaminant in a flow system comprising inert and reactive tracers which are introduced at one point into a non-interacting fluid and extracted at another point to quantify the concentration of the contaminant over time using a computer processor and means for performing the above steps. See entire document, especially Figure 1, abstract, and column 10 lines 1-32, and column 13 lines 4-42, and column 14 line 65 through column 15 line 50.
3. Claims 1-6, 8-11, 13, 14, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Zieher (US 6,730,227 B2). Zieher discloses the claimed invention, a method and apparatus for characterizing a contaminant in a flow system comprising inert and reactive tracers which are introduced at one point into a non-interacting fluid and extracted at another point to quantify the concentration of the contaminant over time using a computer processor and means for performing the above steps, where the amount extracted is proportional to the amount unreacted. See entire document, especially

column 5 lines 8-34, column 10 lines 13-29, column 17 lines 63+, and column 22 lines 14-37.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chatteraj (US 6,329,165 B1) in view of Sivakumar (US 5,413,719).

Chatteraj teaches the claimed invention except for the use of a partitioning tracer. Sivakumar teaches the use of a partitioning tracer in fluid monitoring; see column 4 lines 52+. It would have been obvious to one having ordinary

skill in the art at the time the invention was made to use a partitioning tracer as taught by Sivakumar in the invention taught by Chattoraj to form the interactive tracer, since Sivakumar teaches use as such for monitoring species such as polyelectrolytes which are not reactive and/or form multiphase systems which can be monitored rapidly and sensitively by a partitioning tracer.

5. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zieher (US 6,730,227 B2) in view of Sivakumar (US 5,413,719). Zieher teaches the claimed invention except for the use of a partitioning tracer. Sivakumar teaches the use of a partitioning tracer in fluid monitoring; see column 4 lines 52+. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a partitioning tracer as taught by Sivakumar in the invention taught by Zieher to form the interactive tracer, since Sivakumar teaches use as such for monitoring species such as polyelectrolytes which are not reactive and/or form multiphase systems which can be monitored rapidly and sensitively by a partitioning tracer.
6. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chattoraj (US 6,329,165 B1) in view of Chapman (US 5,767,390). Chattoraj teaches the claimed invention except for the use of a gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph. Chapman

teaches a tracer injection system having gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph; see Figure 1 and column 10 lines 49-56. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph as taught by Chapman in the invention taught by Chattoraj to inject and detect the sample, since such methods produce a defined injection stream and a measurement method which is capable of separating analyte compounds from non-analyte compounds as is known in the art.

7. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zieher (US 6,730,227 B2) in view of Chapman (US 5,767,390). Zieher teaches the claimed invention except for the use of a gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph. Chapman teaches a tracer injection system having gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph; see Figure 1 and column 10 lines 49-56. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a gas cylinder containing pressurized tracer released by a valve, and a gas chromatograph as taught by Chapman in the invention taught by Zieher to inject and detect the sample, since such methods produce a defined injection stream and a

measurement method which is capable of separating analyte compounds from non-analyte compounds as is known in the art.

Allowable Subject Matter

8. Claim 15 is allowed.
9. The following is a statement of reasons for the indication of allowable subject matter: the prior art neither discloses nor fairly teaches the use of a perturbation to the advection flow field and determining the contamination location from the time of arrival and perturbation flow velocity as claimed.


Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Malcosky (US 4,773,255) discloses multiple tracer injection and GC determination. Anderson (US 5,981,283) and Hoots (US 4,783,314) disclose multiple tracers. Slater (US 5,665,538) discloses partitioning tracers. Use of tracers is further disclosed by Klockars (WO 86/03836), Cramp (US 3,672,207), Rosen (US 4,953,562), Crissman (US 5,084,378), Fisher (US 5,179,027), Bode (US 5,279,967), Fowee (US 6,587,753 B2), and Tayebi (US 6,645,769 B2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Cygan
Primary Examiner
Art Unit 2855